

Little Talks on the Milk Situation

Reproducing a series of advertisements outlining our aims and methods in the co-operative marketing of milk.



Wholesale Distributors

FRASER VALLEY MILK PRODUCERS ASS'N
Rogers Building

Retail Distributors

FRASER VALLEY DAIRIES, LTD.
405 8th Ave. West : Vancouver

No. 1

Haven't you frequently found in the course of your life that the impression you gained from a superficial knowledge of something was very different from the opinion you formed when your knowledge was more complete?

Haven't you noticed that difference particularly in the case of prominent business men, when you knew them only by repute and when you came to know them as your neighbors?

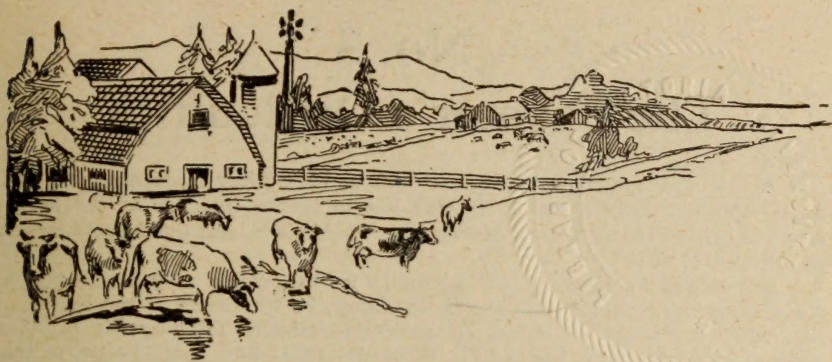
Haven't you talked about "soulless corporations," and then found the men at the back of those organizations to be just human beings like yourself?

And so, when someone comes to us—as occasionally happens—and tells us that we are a "trust" or a "combine" working an injury to the people of Vancouver, we realize that this attitude on their part is due to just one thing—they do not know us as we really are. They are not familiar with our organization—our aims—our difficulties—our work. They have gathered a wrong impression which only a better knowledge can dispel.

Now we haven't anything we want to hide from the citizens of Vancouver—we want them to have the fullest possible knowledge of our methods and our work—to know what we have done and why we did it—and how these efforts have worked out for the common good.

We cannot go personally to you and tell you this story—but we want to tell it to you in a series of brief articles. We will try to cover every point of interest in the production and handling of milk.

First—we want to tell you something of the source of Vancouver's milk supply.



No. 2

The Supply and the Market

Compared with most cities, Vancouver has only a limited area from which to secure her milk supply. Shut off as we are by the ocean, the mountains and the international boundary, with our present transportation facilities, the section from which fresh milk can be shipped to Vancouver for retail delivery is limited to that area along the Fraser River, extending from the delta lands at the mouth of the river, east to Agassiz and Chilliwack districts.

There are about three thousand farms in this district, and probably less than two-thirds of these include dairying on a commercial scale in their activities. These will range all the way from the big farm, where dairying is the main business, to the farmer who keeps only a few cows as a side line to his other farm products.

Government statistics place the number of dairy cattle at 47,676, with an annual production of 27,000,000 gallons of milk.

The principal retail markets for this milk are the cities of Vancouver, New Westminster and North Vancouver. In the district from Point Grey on the west to the Fraser River at New Westminster, we have in the neighborhood of 250,000 people. Now most of these people consume at least some milk, so that we have less than 2000 farmers producing milk to supply about a quarter of a million people—an average of from one hundred to one hundred and fifty consumers for every producer.

For each of these 250,000 consumers to go out to the farm and buy their milk is a matter of physical impossibility—especially as the farms are from five to seventy-five miles distant. It is equally impossible for each farmer to deliver his milk to individual customers in the city.

The fact that pure, fresh milk is the most valuable food we have, is of little practical value to the great mass of people if that food is not readily available. And this is a side of the milk business that is too often lost sight of—the dairy doesn't only sell you milk—it sells you a SERVICE in getting that milk to you—a service whose value can hardly be estimated. Think what it would mean to the city of Vancouver if every dairy in this city stopped bringing in and distributing milk for even one day!

No. 3

The Farmer's Difficulties

A few years ago every farmer had to look after marketing his own milk—and naturally every dairy was out to secure its milk at the lowest possible price. It was a case of everyone for himself, and the farmer mostly got the worst of it.

Sometimes he hardly knew where to go to sell his milk, and when he did make arrangements with some city dairy, he was quite at the mercy of that dairy in regard to his test or the weight allowed for his milk. If they reported that his milk tested only three per cent., how could he prove that it tested 3.5%? If the dairy said his milk was sour when received, what could he do? He couldn't come in from day to day to see that he was getting a square deal. Perhaps, too, in this respect the farmer was sometimes dissatisfied without cause, but so great did the dissatisfaction finally become that the Government took steps to have officials appointed to whom farmers might apply for a recheck of their tests.

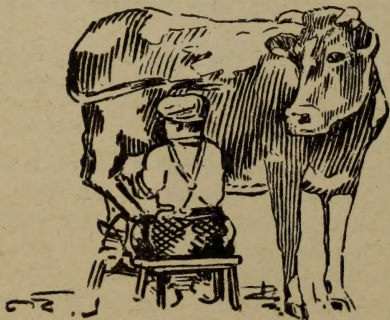
Sometimes the farmer had difficulty in regard to getting paid for his milk. The dairy frequently failed to send his cheque when due—this necessitated a special trip to the city to secure his money—in some cases he was not successful in getting it until long past due, which seriously interfered with his own financial arrangements. In some cases the farmer was never able to collect what was coming to him.

Then, too, suppose a farmer had five cows when he began shipping milk—later in the season he had another half dozen fresh cows—and when hot weather came and milk production was at its greatest, the dairy might notify him that it could not use so much milk, and would limit the amount he might ship, or perhaps cut him off altogether. Now milk isn't a product that can be held until a satisfactory market is obtained, and as every other dairy had its supply arranged for, the farmer would have to ship his milk to the nearest factory and take whatever price they liked to offer for it, or feed it to his hogs. Sometimes it was a dead loss to him.

When the farmer went to buy feed, he had to pay whatever price the dealer asked—but when it came to selling his milk the price offered him was often too low to cover the cost of production. The companies who purchased milk were agreed in their effort to keep prices down, and the

farmers had no remedy because the necessary co-operation among themselves was lacking.

It was a discouraging situation and steadily growing worse—milk sold at a good price in the cities, but the farmer did not benefit. It did not pay him to produce milk. Finally the farmers decided that united effort among themselves was the only way to bring about a better state of affairs, and so the farmers' organisation came to be formed.



No. 4

The Farmer's Company

In the year 1917 a number of the farmers joined together in a co-operative association with the object of bringing about better conditions in the dairy industry. They had their company incorporated under the name "Fraser Valley Milk Producers' Association."

This is strictly a co-operative company of farmers. No one can secure stock unless he is actually a milk producer. When a farmer joins the organization he is expected to take stock in proportion to the amount of milk he has to sell, but no farmer, no matter what his milk production may be, can secure more than \$3000 in stock. Each member of the Association is entitled to one vote only, so that the control of the organization can not pass into the hands of a few members.

The farmer can either pay for this stock in cash, or if he prefers, an amount will be deducted each month from his milk cheque until his stock is paid for. This stock can not be sold or transferred in the ordinary way. Should a farmer go out of business his stock will be redeemed by the Association, full payment being made therefor together with six per cent. interest on the money.

The affairs of the Association are managed by a Board of Directors—a president and six other members, elected annually by ballot of the members. The Head Office is located in Vancouver and the detail of business management is carried on under the direction of a manager chosen by the Board of Directors.

All selling of milk is handled by the Head Office. They decide where the milk from each section can be handled most conveniently, and each individual member is instructed where to ship his milk. All members are paid at the same rate per pound butterfat f.o.b. Vancouver, the shipper living at a distance being of course at a slightly greater expense for transportation charges.

Expenses of marketing and conducting the business of the Association are met by deducting from the payments made to each shipper, a fixed amount per pound butterfat on the total of his shipments. This charge last year amounted to about one cent. per pound butterfat, or approximately one-fifth of a cent for every gallon of milk handled.

In addition to selling milk for its members, the Association, whenever possible, buys supplies for them co-operatively. If enough members in a section want a certain kind of feed, the Association will buy a carload and ship it to that point, thus each member is enabled to secure his individual requirements at the carload rate, and this means a big saving in price to him.



No. 5

How Much Milk We Sell and How

During the year 1920 the Fraser Valley Milk Producers' Association handled 2,645,054 pounds of butterfat. Of this, 1,328,575 pounds were shipped in the form of milk to the cities, and 583,991 pounds were shipped in as cream. City shipments cover what was disposed of to retail dairies and what was handled at our butter factory in Vancouver.

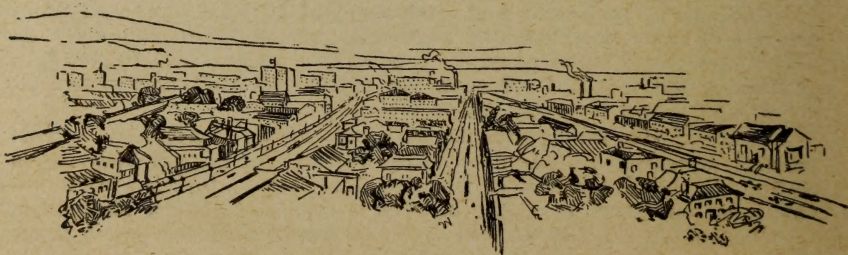
The balance of the milk handled was cared for in our factories outside the city. At Sardis and at Clayburn we have cheese factories, and last year we manufactured a little more than 150 tons of cheese. We have also a condensing plant near Abbotsford, and we supply milk to the condensor of the Pacific Milk Company at Ladner.

At the present time we are supplying milk to seven retail dairies. They advise us about how much milk they will require—if they need say 500 gallons per day, we notify enough of our members to ship to that dairy so that the total of their shipments will amount to approximately the amount the dairy requires. Should the dairy's business increase we add more shippers to their list—should they require less milk, we divert some of the shipments to other channels. Our butter plant in Vancouver cares for any surplus milk coming into the city which is not disposed of through the retail dairies.

Twice every month these dairies report to the Association and to their individual shippers their average test for that period. Once a month they report to the Head Office the total weight of milk received from each shipper, and what his average test was for the month, and send in a remittance to cover the total amount of their milk purchases. Payment to the farmers is made from the Head Office of the Association, and each farmer can count on getting his money regularly at a fixed date each month.

Should a shipper be dissatisfied with the weights and test he is allowed by the dairy he ships to, he reports his complaint to the Head Office. They have special men to investigate all complaints, and their own tester to make a retest wherever the farmer expresses dissatisfaction. In this way a farmer is sure of a fair investigation of his claims, and the dairies on their part are glad to have an unprejudiced handling of all disputes.

If a shipment of milk or cream reaches a dairy in a sour condition, they are not obliged to accept it. It can be sent to the butter factory of the Association to be made into butter, and the farmer is paid by the Association at the sour milk price. In this way both the dairy and the farmer are protected from loss because of milk which has become sour in transit. Sour milk, however, does not bring as good a price as sweet milk, and because the farmer knows this he will exercise all care to see that he does not lose money by having his milk sour through any neglect on his part.



No. 6

The Cost of Producing Milk

It means very little to you to say that it costs so much money to produce a quart of milk. But let us look at the cost from the standpoint of the material and labor that go into that production.

A man over in Ohio, who does considerable figuring of this nature, works out milk production in this way:

The average family consumes about $68\frac{1}{4}$ gallons of milk per year. It takes an ordinary cow 39 days to produce this amount, and here is what she requires in feed:

3-10 acre pasture

685 pounds silage

48 pounds cottonseed meal and oil meal

48 pounds corn

50 pounds hay

50 pounds oats

190 pounds hay

160 pounds corn stover

3 pounds salt

176 pounds bedding material

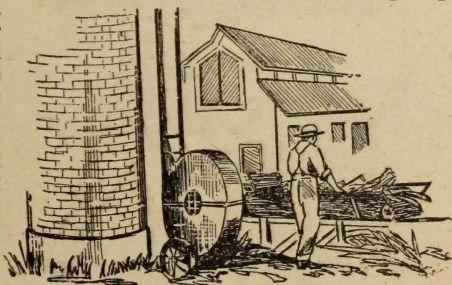
Of course not every farmer feeds his cattle exactly the foods we have mentioned, but what is cut off in one kind of feed must be made up in another.

In addition to this it requires 18.2 hours of a man's time to milk the cow 78 times.

So far we have taken into consideration only the actual labor and feed necessary to produce that milk—we must add something for the original cost of the cow—the investment in buildings and equipment necessary on a dairy farm—the upkeep of these—then we have what milk costs to produce on the farm.

Before that milk can be delivered to you, there comes the expense of hauling to the shipping point, and cans for shipping it in—the railway charges for transportation—delivering the milk from the railway to the milk plant—testing, pasteurizing and bottling the milk—the cost of bottles and cases—the investment in horses and wagons for delivering, and the upkeep of these—the time of a man and a horse to deliver that milk to your door 365 times in the year—and the average householder wants the milk delivered at the top of the steps at the back door.

Just figure against these items what you pay for $68\frac{1}{4}$ gallons of milk. Do you know any other food product that represents so much investment and labor to produce, that you can buy for anything like the same money?



No. 7

Wholesale Milk Prices

No city can have an abundant supply of fresh milk unless there is a dairy industry in the surrounding country. To have an industry of any kind anywhere, conditions must be such that people can profitably engage in that industry.

Would a business man in Vancouver buy a lot, erect a store, invest a lot of money in stock and hire help to run his business if he couldn't get more for his goods than he paid for them?

A farmer has to make a big investment for land, buildings, equipment, cattle and help to run a dairy farm—and there are no half-holidays and Sundays off in that business. How long do you expect him to continue producing milk if he doesn't get a little more out of it than it costs him?

Yet here is the situation in one of the largest cities in the United States at the present time. During the fall of 1920 the retail price of milk was 16 cents per quart—it is now 14 cents per quart. But the dairymen in the vicinity of that city are paid for every hundred pounds of milk they sell 55 cents less than it costs to produce that milk; and they are talking of killing off their herds, because they cannot afford to keep on producing milk. But if they slaughter their herds, can you see what happens to the supply and the consumer's price in that city?

Conditions were pretty nearly at that stage in Vancouver before the farmers had co-operative marketing. They could not afford to produce milk at the price they were offered for it, yet it was not the public in the city who were reaping the benefit of that low price. Co-operation has secured better prices for the farmer; but because the association began its operations at a time when prices were steadily rising, the city dweller is prone to lay the blame for increased milk prices at its door, and say there is a combine among the farmers to keep prices of milk high.

But the fact remains that during the period of high prices in all lines of food products, milk sold in Vancouver at a lower price than in any other city in Canada, with the exception of Ottawa. Prices in most Canadian and American cities were from 16 to 20 cents per quart, while milk was selling in Vancouver at 14.2/7 cents per quart. In Ottawa the price of milk was 14 cents per quart, and in that city delivery costs are not nearly so high as in Vancouver. Here practically all deliveries are made up a flight of steps at the back door; in Ottawa delivery is on the level, or nearly so, and 95 per cent. of deliveries are made to the front door—a big saving in the time required for delivering.



That milk prices should be higher during the past few years was inevitable—the farmer had to pay more for every item that entered into his cost of production—yet, compared with other foods, milk showed the least increase in price. Compare the advance in milk with the increase in cost of flour, sugar, meat, fruit—in fact, every food product in everyday use.

The association of farmers has been a big factor in keeping prices of milk low in Vancouver—first by keeping wholesale prices as low as could be done in consideration of the cost of production, and second by their engaging in the retail distribution of milk.

No. 8

Why We Retail Milk



After a year or two of careful and patient work, the details of wholesaling milk co-operatively were fairly well established on a satisfactory basis. The farmer was then getting a better price for his milk, with less trouble in marketing; he was sure of his money, and he was able to purchase to better advantage through co-operation. But one difficulty still remained—there was too great a difference between the wholesale and retail price of milk, and until this was remedied a really satisfactory city market was impossible.

Studying this problem carefully, the farmers' association came to this conclusion—that retail handling and distribution of milk were costing too much money. Either the dairies were seeking too large a profit, or they were not handling milk as cheaply as should be done.

It is just as true in the dairy business as in any other industry—a dozen small plants cannot work as cheaply as three or four large ones. Too many small dairies meant too much expense in caring for milk. Where ten men were required to handle the output of a plant, that same plant could have handled twice or three times the amount of milk with no additional cost for labor.

Again, too many of the dairies were lacking the necessary capital to instal machinery to handle milk more economically and thus cut down factory costs.

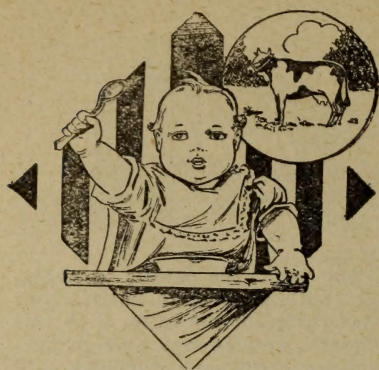
But especially from the distribution end of the business were costs piling up because of too many dairies in the city. Here are a few blocks of city street—Dairy No. 1 has a couple of customers in a block—Dairy No. 2 has about the same proportion—and often half a dozen deliveries were covering a territory that could easily have been served by one delivery at far less expense.

The Mayor of the City of Jamestown, N. Y., where municipal distribution of milk has been undertaken, says:

"The waste of time, energy and equipment under the old method of distribution is tremendous. At the present time half of what customers pay for milk is required to maintain this wasteful system of distribution. The farmer receives for his milk no more for owning and operating a dairy farm, preparing the milk for market and transporting it many miles into the city, than does the distributor who merely delivers it to the consumer. This is obviously a very unfair division of revenue."

Here in Vancouver the first effort made by the farmers to overcome the difficulty of costly distribution was to endeavor to have the City of Vancouver take the distribution under municipal control. But this would, of course, involve a considerable outlay of city funds, and the city officials did not consider the plan feasible at the time. Whenever the city can take hold of milk distribution and operate a municipally controlled plant and delivery system, the farmers will be glad to relinquish the field to them.

Meanwhile, since the city did not feel able to take up the matter, the farmers felt that it was due to the city consumer to have something done to lessen distribution costs, and they were willing to try to prove that their theory was correct.



No. 9

Distribution from Producer to Consumer

The farmers of the Fraser Valley have interested themselves in the formation of a company for the retail distribution of milk, not that they might thereby be enabled

to get a better price for their milk, because they are already able through co-operative marketing to secure a fair price for their product, but because they felt certain that by centralizing handling and distribution of milk a reduction in cost could be effected, and this would ensure a saving to the consumer. In other words, the work of the farmers' retail organization is not to make more profit through higher prices to the producer, but by reduction of expenses to lessen the cost to the consumer, and in that way establish a larger market for the milk the farmer produced.

The retail company was incorporated under the name "Fraser Valley Dairies Ltd." It is an entirely different company from the Fraser Valley Milk Producers' Association, being purely a retail concern, with no interest or connection with the wholesale end of the milk business. It has its own board of directors and manages its own affairs. It buys its milk on the same basis and at the same price from the wholesale association as any other dairy in the city.

It began its operations by the purchase of a number of existing dairies, centralizing their business in one dairy. Because funds were available for installing the best labor-saving machinery, and because of the far greater volume of milk handled, the company has been able to effect a very considerable saving in the cost of handling milk. Again, in the distribution end of the business it has been able to cut the cost of delivery—overlapping deliveries have been done away with—each wagon can serve a greater number of customers more effectively, and at no greater cost than they had formerly served a smaller number.

But the public says "We are not getting milk cheaper than we formerly did. Where is the advantage to us?" It is quite true that the price of milk is not cheaper than it was some years ago in Vancouver. But remember this: Costs in all lines have been tremendously increased, whether for labor, machinery, horses and wagons, equipment—every item that goes to make up the cost of handling milk. Had we not been able, through the amalgamation of these dairies, to effect a saving to offset these increased costs, instead of paying a little more than 14 cents during the period of high prices, you would have had to pay from 16 to 20 cents per quart. The public paid this price in North Vancouver and New Westminster—and milk didn't cost any more wholesale there than it did here.

Here is another fact for the public of Vancouver to remember: During the year 1918 and the early part of 1919 costs of production were considerably lower than during the season 1919-1920. Yet in 1918-1919, when the farmers were not retailing milk, you paid a higher price per quart than you did in 1919-1920, after the Fraser Valley Dairies Ltd. began operations—ample proof that the amalgamation effected has been a direct benefit to the consumer.

But not in price alone has the consumer benefited. He is sure of a milk supply that is handled in the most approved sanitary manner. We want you to know not merely why we retail milk, but how that milk is cared for, and why each step is necessary. The Fraser Valley Dairies Ltd., who handle the milk, will continue these talks to you, telling you just how your milk supply is taken care of.

No. 10

The Dairy's Service

Do you remember, away back in your school days, a story that used to be in the Canadian school books about the man who "said he could do as much work in a day as his wife could do in three"—how she suggested that they exchange work, and what the man's opinion was after trying to attend to her tasks for a single day?

It's something like that with the public and the dairy business. The public is apt to consider that as the cow gives the milk, therefore running a dairy isn't very much of a task. One lady, who visited us recently, said:

"I used to think that milk came in one door, in cans, and all you did was pour it into bottles, take them out through another door, and put them on the wagons to send around to your customers."

Well, even if we didn't do any more than that, it would be a good big task to wash the bottles and cans every day. But here are a few more things that are included in the day's business:

1. The milk must be hauled from the railway depots to the dairy.
2. It is next dumped from the cans, weighed, and samples taken for testing; that keeps two men busy.
3. All the milk must be standardized and tested—another three men are required for that.
4. One man's time is taken up looking after the pasteurization of milk—still another cares for the cream.
5. At the bottling machines four men are required, and two more are kept busy in the storage rooms lifting the filled cases from the conveyors and putting them aside ready for the morning delivery.
6. Washing the bottles takes two men—washing the cans two more, for all cans are thoroughly washed and sterilized before being sent back to the farms.
7. To look after the boilers, that furnish the hot water and steam we use, keeps two engineers busy.
8. Three men are required to check up the output and the returns daily.
9. It takes eight auto trucks and sixty wagons to handle the milk, and we employ seventy drivers.
10. We have to employ six stablemen to look after our eighty horses; and we have to have harness-makers, blacksmiths, carpenters, mechanics and painters to keep our wagons and machines in repair.
11. It requires quite an office staff to look after the business details of an organization of this kind.
12. We have to pay the farmer for his milk, and we have to buy bottles to put it in. We have to have machinery to care for the milk; and we have to buy light, power, water and gas to operate that machinery.

We could tell you a lot more details if we had the space. After all, getting the milk supply from the farms to the consumer involves a great deal of detail work, doesn't it?



No. 11

The First Step in Caring for Milk

Milk is shipped to us from the farms in cans, and when our trucks deliver these cans at the dairy the first thing to be done is to weigh the milk.

Each man's shipment is emptied separately into a weighing vat, which is attached to a Toledo scale, and the total weight of the milk is recorded to the shipper's credit.

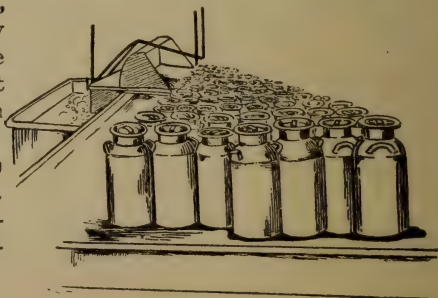
The reason for our weighing milk is that we purchase it, not by the gallon, but by the number of pounds of butterfat that it contains, and the total weight of milk sent in by any farmer, multiplied by his average butterfat test, gives the number of pounds butterfat to be paid for. In this way the farmer is paid not only for the quantity of milk he sends in—he is paid for quality as well, and this method does much to ensure the production of milk of good quality.

Every day, as soon as a shipper's milk has been weighed, a small sample is taken from the weighing vat and put into a test bottle bearing his name. Twice each month tests are made of these sample bottles. As a little has been added to the bottle from each day's shipment, this gives the farmer a fair average test for all his milk. This system of testing has been adopted because, where milk is being received from so many shippers, it is quite impossible to test out individual samples each day.

We are also able to test milk for cleanliness by filtering through a small disk of absorbent cotton. This disk retains any particles of dirt that may be in the milk, and gives us an accurate check on whether shippers are exercising proper care in handling their milk.

Another test can be applied to test the degree of acidity in milk, to determine if it has been kept cool and is perfectly fresh and sweet. This test is a valuable help in preventing any sour milk becoming mixed in the vats. Of course, at this time of the year there is very little danger of sour milk; but sometimes in the hot weather we have to refuse to accept milk that has not been properly cooled, and which has become so nearly sour that it would endanger the keeping qualities of our milk if it became mixed with other milk in the vats.

After the samples have been taken, the milk passes into a larger vat, from which it is automatically pumped to the standardizing room.



No. 12

Why Milk is Standardized

We are often asked this question, "Why can't we get milk just as it comes in from the farm?"

When people ask us that, we know that they have in mind the days when they could go to a neighbor and get milk fresh from his cow. It was always the same from day to day—they knew just what to expect.

But suppose we were to send out our milk without its being mixed and standardized—if we delivered it "just as it comes from the farm." We get some milk that tests as low as 2.8% in butterfat—we get some that tests nearly double that amount, and tests vary all the way between the two. If we sent you a quart of milk today that tested 5% butterfat, and one tomorrow that tested only 2.8%, would you be satisfied? Can you imagine the number of complaints that every day would bring us? No customer could depend on getting the same quality of milk two days in succession—it would all depend on whose milk happened to be sent them.

Then, too, we pay for our milk on the basis of its butterfat test. Suppose we were to charge you on this basis, for we could hardly expect you to pay as much for milk with a lower test as you did for that which tested higher. Today your bottle of milk might cost you eight cents—tomorrow it might cost you twenty cents—for each individual bottle would have to be tested and sold according to its butterfat test.

Or if we could arrange it so that you got milk with the same test every day—your next door neighbor might be getting milk with an altogether different test. Do you think the fact that you were not paying the same price would do away with dissatisfaction? One or the other would be sure to feel that they were not getting as good value as their neighbor for the money they paid for milk.

You can readily see that it would be quite impossible for us to send out milk this way and have it give satisfaction. Instead we mix all the milk in large vats, combining the lower testing milk with that which gives a higher test until we have brought it all to the one standard. Every vat is tested—every vat is brought to the same standard—every day's milk tests the same as every other day's—every customer is treated alike in the matter of quality.

We are keeping this standard of butterfat as high as can possibly be done and yet sell milk at a price that will not work a hardship on the great majority of our customers. But when you think of quality in milk, remember this—milk must not be judged solely by its cream line. Cream is good—we all like it, and it is the most easily digested fat food we have. But, after all, it is a fat food, and a perfect diet includes only a limited amount of fats, for fats are only heat and energy producers. The protein—the food substance that builds up and repairs bodily tissue—is not in the cream—it is in the skim milk. You have never heard it said that cream is a "perfect food." Milk is, but you have to include the skim milk with the cream to get that perfection.

No. 13

What is Clarifying?

After milk has been standardized, the next process through which it passes is called clarifying.

Naturally, everybody wants milk that is perfectly clean—and it is the only kind we want to deliver to our customers. We make every effort to be sure that our milk is clean right from the start—that every precaution is taken in milking, straining and caring for the milk right on the farm—and we believe we can depend fully on most of our shippers to give the milk the care it should have.

At the same time, when milk is being shipped to us from upwards of three hundred different farms, it is pretty hard to be certain of the care each individual can get. There is always the danger of dust getting in because the farmer forgot to put the cover on soon enough—there are lots of ways by which some foreign substance might get into milk. We do not want to take any chances that our milk might not be perfectly clean, so it all goes through the process of clarification.

A clarifier is a machine so constructed that, when milk passes through it, it removes any substance which is heavier than the milk. In this way it removes all sediment, leaving the milk perfectly clean.

We have frequently tested out samples of our milk, after clarifying, by filtering them through a cotton disk. Except for being somewhat creamy in color, the disk could hardly be distinguished from an unused one, showing that the milk was quite free from all sediment.

After being clarified, the milk next goes to the pasteurizing department.



No. 14

The Process of Pasteurization

Pasteurizing milk in our dairy simply means passing the milk through a heater that raises its temperature to 142 degrees Fahrenheit, then holding it at this temperature in large enamelled vats for a period of thirty minutes. Then the milk is immediately cooled to a low temperature, bottled and placed in storage.

The purpose of pasteurization is to destroy any harmful bacteria that might be contained in the milk; and medical authorities are agreed that, as a city's milk supply must be drawn from so many sources, and there is so much chance of its becoming contaminated before reaching the consumer, the only way to ensure a safe milk supply is to have it pasteurized.

The process of pasteurizing, properly carried out, safeguards against such germs as tuberculosis, typhoid fever, scarlet fever, diphtheria, septic sore throat, and other common epidemics.

Do not confuse pasteurizing with boiling of milk. When you actually boil milk you do to some extent affect its food value. It is not only more difficult to digest, but certain elements that are very beneficial to the human system are destroyed by the high temperature. Careful experiments, however, have proven very clearly that pasteurizing temperature, while it will destroy certain harmful bacteria, in no way affects the digestibility or food value of milk.

We cannot do better here than quote you the opinions of some very prominent health officials:

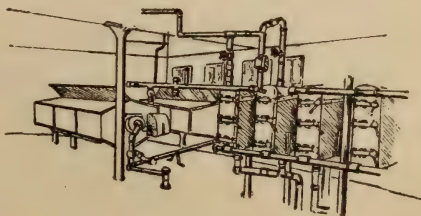
Dr. Francis E. Fronczak, Health Commissioner, Buffalo, N. Y.: "We regard pasteurization of milk so important to safeguard public health, that an ordinance was adopted to make this mandatory."

Dr. Herman Briggs, Health Commissioner, New York City: "In my judgment, pasteurized milk is the only safe milk."

Lester A. Round, Pathologist, Rhode Island State Board of Health: "I consider certified and pasteurized milk to be the only kinds of milk that can be considered safe."

Dr. D. B. Armstrong, National Tuberculosis Association, Framingham: "Pasteurization properly carried out does not injure the growth-producing elements or vitamins in milk, neither does it deleteriously affect its food value."

Pasteurization is your safeguard against milk carrying any infection to your home.



No. 15

Bottling the Day's Milk

After milk has been held at the pasteurizing temperature for thirty minutes it passes from the pasteurizing vats into coolers, where it is rapidly cooled to a temperature below fifty degrees. This low temperature is necessary to prevent the development of bacteria in the milk. When it is thoroughly cooled it goes down to the next floor to the bottling machines.

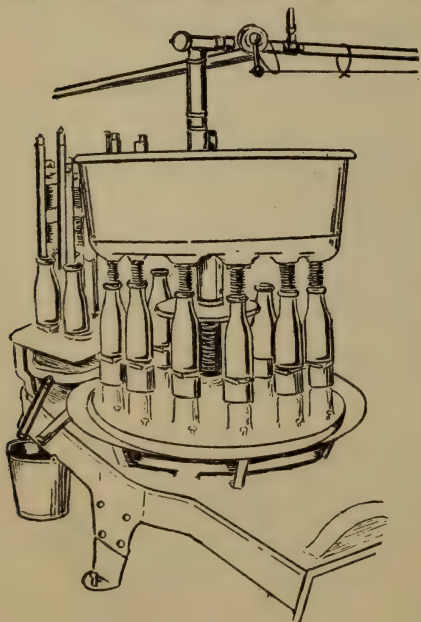
Most people find the process of bottling very interesting to watch. The bottlers consist of revolving tanks, circular in shape, fitted with valves for filling the bottles. A man stands at one side of the machine, lifting bottles from their cases and setting them on the table of the machine. As the machine revolves the bottles are automatically raised, press against the valves, releasing the milk into the bottles; then, as the machine turns, the bottle is automatically lowered, closing the valve and shutting off the flow of milk. The bottle passes along to another automatic device which places the cap securely on the bottle. Another man then lifts the bottles off, places them in the cases, and sends the cases along the conveyors to the storage room.

These machines will fill and cap the bottles as fast as two men can set the empty bottles on the machine and take the filled ones away. They average about sixty bottles a minute, or 3,600 an hour.

Gravity conveyors carry the cases of bottles from the bottling machines into the storage room, where two men are kept busy piling them up ready for the next morning. The temperature in the storage rooms is kept very low, so that the milk can be delivered to you in perfect condition.

In the morning the conveyors carry the milk out to the loading platforms. In winter months the men begin loading their wagons at 6 o'clock, in the summer months at 4 o'clock, and the average loading time per wagon is $1\frac{1}{2}$ minutes. As soon as his wagon is loaded, each man sets out on his day's rounds.

Delivery routes are so arranged as to prevent any overlapping, and so that each man can make as many deliveries as possible. About 250 customers is the average to each wagon, though the number depends somewhat on how thickly a district is settled, and how far a wagon has to travel.



No. 16

Keeping the Dairy Clean

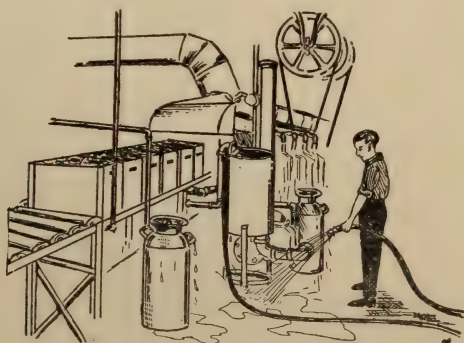
If you happened around here some morning, you would be liable to think we were getting ready to move. Everything in the dairy seems pulled to pieces—pipes are pulled apart—machines seem to be half taken down—and you wonder what we are trying to do.

It's all part of the cleaning-up process. Every bit of pipe through which milk passes—every bit of machinery—is so made that it can be taken apart into convenient sections to admit of thorough washing and sterilizing. All vats are well washed out and sterilized—the floors are washed—storage rooms scrubbed out—in fact, it's a case of “water, water everywhere,” and every man you see has a hose in his hand. But all this sanitary cleaning is necessary every day if you are to have a perfectly sweet, clean milk supply.

As soon as each separate piece is thoroughly cleansed, the machines are quickly reassembled, and we are ready to care for the day's milk, which begins to arrive along towards noon.

Did you ever see the bottles being washed in a dairy? Here is the way we do it: As soon as the wagons return each day, the empty bottles are placed upside down in their crates—which have only a few wires across the bottom—and the cases are placed on the conveyors and carried down to the bottle washer—a long, box-like machine, through which both cases and bottles pass. As each case of bottles enters the washer, jets of water are forced up into the bottles. These strike the inside of the bottles with considerable force, loosening any dirt, and as the bottles are upside down the water runs out again, carrying the dirt with it. In all, the bottles pass through twelve different washings in this way, beginning with water that is only moderately warm, and gradually increasing in temperature until bottles and cases pass out at the other end of the machine thoroughly sterilized in live steam.

They are then carried along by the conveyors to the bottling room, where the cases are lifted from the conveyors and set aside to become cool before filling.





No. 17

Bottles and their Importance

We have become so used nowadays to having our milk delivered safely sealed in bottles, that we overlook the important part these bottles play in the milk business.

At the present time, counting all the products we put out, we are using about 30,000 bottles every day in our dairy. Of course, the greater number of these are quart bottles.

Now the careful checking up of statistics from the operations of larger dairies all over the continent shows that the average life of a bottle is from fifteen to twenty days. That means that we have to buy almost 15,000 bottles every month to replace breakages and bottles that do not come back to us.

A quart bottle costs pretty nearly twelve cents now, and smaller sizes are, of course, a little less in price. That's a big item of expense for bottles alone. But sometimes we find people inclined to say, "Oh, well, that's the dairy's business—they have to stand the loss."

But did you ever look at it this way: Every time you carelessly break a bottle—every time you use a bottle for some other purpose and so prevent its return to the dairy, you are adding something to the cost of milk. If we did not have to buy 15,000 bottles every month, we would be able to sell milk for just that much less.

We know quite well that you cannot avoid breaking a bottle occasionally. We break about 100 every day here in the dairy, most of which are broken in the washing machine, due to the fact that they are already cracked when returned to us, and they will not stand the hot water in which bottles are washed. There are always a few broken on the wagons, too, especially where the roads are in bad condition; but, considering the number we handle, the percentage of breakage here is very small. Most of our bottle shortage comes from the non-return of bottles. It is so easy to go to the store and buy an extra bottle of milk, and forget to take an empty bottle with you—or to take a bottle of cream or milk out to a picnic and throw the bottle away.

Yet every bottle a dairy loses in this way must be replaced by a new bottle—and every bottle bought means added cost in caring for the milk. We try to reduce expenses in every way and give you the benefit of reduction—and this is one point where every customer can do something towards reducing the cost of milk, by giving special care to the return of all bottles to the dairy.

No. 18

Why the Difference in Quart and Pint Prices

Customers often ask us why their dollar will not buy twice as many pints as it does quarts. Here are a few very good reasons:

If we sell twenty-five gallons of milk in quarts, it takes just 100 bottles. But, as we told you in the previous talk, for every hundred bottles in daily use, we have to buy forty to fifty new bottles each month to replace break-ages and non-returns. That means, if we deliver in quarts we have somewhere about fifty new bottles to buy each month for each twenty-five gallons of milk in our daily delivery. But when we deliver in pints, it takes 200 bottles to take care of this amount of milk, and this means ninety to one hundred new bottles to buy. Now, pint bottles cost almost as much as quart bottles, so that selling by the pint means very nearly double the cost in bottles alone.

The process of filling and capping pint bottles takes just as long as it does for quarts. Two men on the pint bottling machine can care for only half as much milk in an hour as can two men on the quart bottling machine.

Again, it costs just as much in time and labor to wash pint bottles and practically the same amount of time in storing and loading.

Difference in delivery costs is another big item. It takes a man just as long to make ten calls and deliver ten pints as it would to deliver ten quarts, so that delivery costs for pints are double what they are for quarts for the same quantity of milk.

Pint bottle caps cost just the same as quart bottle caps.

Taking operating costs all through, it would cost us almost double if we delivered all our milk in pint bottles to what it would if it were all sold in quart bottles.

Did you ever think of all these little items when you are considering the difference in cost of pints and quarts?



No. 19

The Milk We Sell

Here's another favorite question: "How can you put out so many different grades of milk, and where do you get your cream?"

First of all, we do not put out different grades of milk. Besides our regular Fraser Valley Pasteurized Milk—which is all of one standard—we sell Approved Milk, Cream and Creamo.

Approved Milk is not pasteurized. A number of people prefer milk that has not been pasteurized, especially for feeding very young children, and to meet that demand we sell what is known as "Approved Milk." That milk is bottled right at the farm where it is produced, and shipped to us in the bottles. All we do is deliver the bottles to your home. The fact that we deliver this milk has nothing more to do with the quality of our pasteurized milk than does the fact that a merchant sells flour affect the quality of his cheese.

The farms at which "Approved Milk" is bottled have to conform to certain regulations before we will sell their milk under this name. Their cattle must be tested regularly to see that there is no tuberculosis in the herd—they must take special care in milking, cooling and bottling the milk—for, since we do not pasteurize this milk, we must be certain that every possible sanitary precaution has been taken in getting it ready for market. At the present time the Approved Milk we sell is bottled at two farms—that of Mr. J. M. Steves, on Lulu Island, and Shannon Bros., at Cloverdale.

"Creamo" is made by mixing a certain quantity of milk and cream, and putting this mixture through a homogenizer at very high pressure, so that the butterfat particles are broken up very fine and remain mixed through the milk, instead of rising to the top. It is much richer than ordinary milk, being about half as rich as table cream. "Creamo" is an exclusive product with this firm—and no other dairy in the city is entitled to sell you a product under this name.

Where do we get our cream? We get a great deal of it as cream direct from the farm. Some farmers prefer to separate their milk, shipping only the cream and retaining the skim milk for their pigs or chickens. Part of our cream we separate right here at our plant. When we want a quantity of cream, we take so many gallons of milk, separate it, sell the cream as such, and dispose of the skim milk in various ways. Our next article will tell you how skim milk is disposed of.



No. 20

What We Do with Surplus Milk

Lots of people ask what we do with the milk that is returned to the plant from the wagons each day after the deliveries are made.

First of all, we try to avoid sending out much more milk than will be required for the day's trade. For that reason we have each salesman turn in a slip daily stating what his requirements are for the following day, and we bottle only what we think is sufficient to meet all demands.

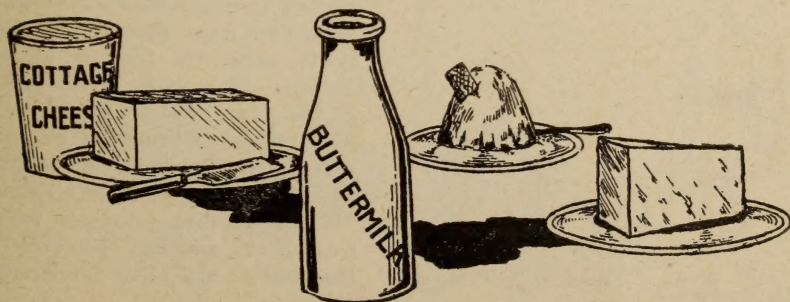
These precautions prevent large quantities being returned to us after being out on the wagons for hours. Of course, there is always a certain amount of milk returned each day; but we do not put those bottles away and send them out next day. Every bottle is emptied as soon as it comes back, and the milk thus returned, and what was left over from bottling, is sent up to be separated, so that the cream can be used for churning. You can thus be sure that not a bottle of yesterday's milk is being delivered to you—it is all milk that has been freshly bottled.

People often wonder, too, what we do with skim milk, and some people think that we throw it away. We can readily dispose of every bit of skim milk that we have—in fact we could dispose of a good deal more if we had it. We have a big demand all the year round for skim milk for cooking purposes from hotels, bakeries, restaurants, etc.

A large number of people who keep chickens in the city buy milk regularly for feeding them.

In the summer time, when we are getting in a larger quantity of milk, we make cottage cheese from the skim milk. A lot of our customers are very fond of this cheese, and we could dispose of it all the year round; but in the winter the milk supply is not so great, and the other channels take all the skim milk we have, so we are not able to manufacture this cheese.

There are many other ways of disposing of skim milk, such as the manufacture of milk powder, etc., but up to the present our supply of skim milk has been too limited to enable us to make use of any of these channels.



No. 21

What the Dairy is not Responsible For

Dairies—not just the Fraser Valley Dairies, Ltd., but all dairies—frequently get blamed for things they are not in any way responsible for.

One of these things is the “blue” color of milk. Even our friend the “Buzzer,” who is persistent in pleading for a fair attitude on the part of Vancouver citizens in dealing with public utilities, took occasion in a recent issue to have a sly little slap at the color of milk.

Were you ever out on the farm in winter and watched them churning butter? When the cream was all ready in the churn, the farmer's wife got down the bottle of butter color and added a little to the cream. That was quite all right, for butter color is a perfectly harmless vegetable oil. But if she happened to be out of butter color, did you notice the color of the butter she churned? It wasn't very much the color you usually associate with butter—in fact, it was more like tallow in appearance.

But if you happened to be there in June, you didn't see any butter color added, yet the butter came out of the churn a beautiful golden shade. There wasn't any difference in the quality of butter—only a difference in appearance, due to the presence of that beautiful coloring matter provided by Nature in the green grass.

It is just the same with milk. In winter it lacks the rich creamy color that only the green grass can give. It tests just the same—it has just as much butterfat in it—just as much of any of the other food elements; but people see the difference in color, and straightway attribute that to a difference in quality.

Of course they tell us about it—and we would always rather hear about it when they are dissatisfied—but this

is one place where we are not to blame. We haven't altered the standard of your milk in the smallest degree. We cannot help the difference in color—old Mother Nature is responsible for that. Of course we know that in these days it is quite the fashion to help Nature out a little in the matter of “coloring,” but we would rather leave the complexion of our milk entirely in her hands. We want to be able to say to you at all times: “We add nothing to our milk—neither coloring, preservative, chemical or any other foreign substance.”



Production

Summary

How many citizens realize the vast extent of the dairying industry for even such a city as Vancouver? To get facts and figures in concise form we have but to refer to Government statistics regarding the Fraser Valley. On approximately two thousand farms dairying is carried on commercially. Dairy cattle—47,675 of them—are giving an annual production of 27,000,000 gallons of milk for the use of a quarter million people residing in the area from New Westminster and west to Point Grey. To figure out the labor required, the extent of the investment, the care and supervision necessary to produce this enormous supply makes one realize the tremendous undertaking necessary to guarantee the needs of the consumer as regards dairy products.

To effect greater efficiency and economy in production and service to the consumer, and to eliminate abuses that the individual farmer was subjected to, the farmers found it necessary to associate their interests.

Only those actively engaged in the dairying industry are eligible for membership in the Fraser Valley Milk Producers' Association. It is impossible for any but those having the welfare of this industry at heart to have a voice in its management. This organization is in many ways a protecting influence for the consumer. To illustrate:

Production cost is a matter both producer and consumer are keenly interested in—naturally so. That the cost to the consumer is kept at the lowest possible level is evidenced by the fact that, during the period of high prices, the residents of North Vancouver and New Westminster were paying 16 to 20 cents per quart, while the good people of Vancouver were paying just a little more than 14 cents. In all fairness, do not overlook the fact that milk did not cost any more wholesale in these communities than in Vancouver.



Distribution Summary.

Distribution is recognized as a separate problem from that of production. An entirely independent organization handles the distribution, or retailing, of the milk of the Fraser Valley Milk Producers' Association. To accomplish this task satisfactorily means considerably more than just carrying on a daily delivery service. As in the production, so also in the distribution, there is much labor, investment, care and supervision required.

From the time our big auto trucks go to the railway depots to get the milk that has been shipped to us and we have it all bottled and delivered to your doorstep every day there is entailed an enormous expenditure of energy.

The milk must be weighed and tested for butterfat; for acidity and for cleanliness, etc.; then standardized and tested again; there is the pasteurization of milk and of cream; the bottling machines need careful attention; cases and cases of the bottled milk must be handled and conveyed to the storage room to be in readiness for the morning delivery.

If it could be possible for our patrons to follow the work necessary to deliver the milk to their doors, we feel confident they would realize that the distribution of milk is a complicated problem.

To start with, the cans we receive the milk in have to be washed and sterilized before we return them to the farms. Bottles—30,000 of them—have to be daily washed and sterilized, not just once, but twelve times.

Our delivery service requires eight auto trucks, sixty wagons, seventy drivers, eighty horses, six stablemen, also harness-makers, mechanics, blacksmiths, carpenters, painters and others. Then there is an office staff required to attend to the business details of the organization. We have to purchase machinery, bottles, light, power, water, gas and many other items.

This entire effort is put forth that the milk consumer may have a daily supply and service second to none on this continent.

Only by maintaining our organization to the highest point of efficiency are we enabled to deliver milk at a price that will not work a hardship upon the majority of consumers. Remember that the price you are paying for milk has not increased in the same proportion as has the cost of our operating expenses during recent years.

